

PRELIMINARY AMENDMENT

AMENDMENTS TO THE CLAIMS

Kindly cancel claims 1-31 (all pending claims).

Kindly add new claims 32-51.

Claims 1-31 (cancelled).

32. (new): A multi-stage collector system for removing particulate and gaseous matter from a gas flow stream having a flow direction, the collector comprising:

at least one pair of parallel corrugated plate electrodes forming alternating concave and convex regions in the direction of said flow stream, said plate electrodes connected to a first electrical potential;

said concave regions containing a second electrode connected to a second electrical potential;

said convex regions containing a barrier filter, a part of said barrier filter being conductive and connected to a third electrical potential;

said first, second and third electrical potentials chosen to allow electric discharge between said second electrode and said plate electrodes or between said plate electrode and said barrier filter.

33. (new): The multi-stage collector system of claim 32 wherein each of said corrugated plates contains sinusoidal corrugations.

34. (new): The multi-stage collector of claim 32 wherein said second electrode is a flat plate with a sharp leading and/or trailing edge.

35. (new): The multi-stage collector system of claim 32 wherein said second electrode has a circular cross-section.

36. (new): The multi-stage collector system of claim 32 further comprising a means in communication with said

electrodes and said barrier filter for recovering recyclable waste products.

37. (new): The multi-stage collector system of claim 36 wherein said recyclable products contain metals.

38. (new): The multi-stage collector system of claim 36 wherein said recyclable products contain halogens.

39. (new): The multi-stage collector system of claim 32 wherein said gas stream is gas from a gasifier system.

40. (new): The multi-stage collector system of claim 32 wherein said gas stream is from a fluidized bed combustion plant.

41. (new): The multi-stage collector system of claim 32 wherein said gas stream has a temperature greater than 350 degrees C.

42. (new): The multi-stage collector system of claim 32 wherein said gas stream has a pressure of greater than 5 bar.

43. (new): A multi-stage collector system for removing particulate and gaseous matter from a gas flow stream, the collector comprising:

at least two plate electrodes in approximately parallel relation to each other extending in the direction of said gas flow stream, said plate electrodes forming alternating wide and narrow zones with each of said plate electrodes connected to a first electrical potential;

at least one hollow barrier filter made of an electrically insulating material situated in at least one of said wide zones;

a first electrode located inside said barrier filter, said first electrode connected to a second electrical potential;

a second electrode situated outside of said barrier filter in one of said narrow zones, said second electrode connected a third electrical potential;

said first, second and third electrical potentials chosen to cause an electric discharge from said second electrode to at least one of said plate electrodes or from said second electrode to said first electrode through said barrier filter.

44. (new): The multi-stage collector system of claim 43 wherein said second electrode is attached to said barrier filter.

45. (new): The multi-stage collector system of claim 43 further comprising a means in communication with said electrodes and said barrier filter for recovering recyclable waste products.

46. (new): The multi-stage collector system of claim 45 wherein said recyclable products contain metals or halogens.

47. (new): The multi-stage collector of claim 43, wherein said hollow barrier filter has a cylindrical cross-section.

48. (new): The multi-stage collector of claim 43 wherein said alternating wide and narrow zones are sinusoidal.

49. (new): The multi-stage collector of claim 43 wherein said first electrode is a conductively coated inner surface of said hollow barrier filter.

50. (new): A method of collecting particulate matter and converting waste gases in a multi-stage collector system comprising the steps of:

passing a stream of gas through a pair of  
approximately parallel plates, said plates being at a  
first electrical potential;

placing at least one hollow dielectric barrier filter  
between said plates, said hollow barrier filter  
containing an electrode being at a second electrical  
potential;

placing a discharge electrode between said plates at a  
position outside of said barrier filter, said

discharge electrode being at a third electrical potential;

choosing said first and second electrical potentials to cause an electric discharge from said plate electrode through said barrier filter to said electrode in said barrier filter.

51. (new): The method of claim 19 further comprising choosing said first and third electrical potentials to cause an electric discharge from said discharge electrode to at least one of said plates.